

# CONSERVATION OF THE K-QUANTUM NUMBER IN WARM NUCLEI\*

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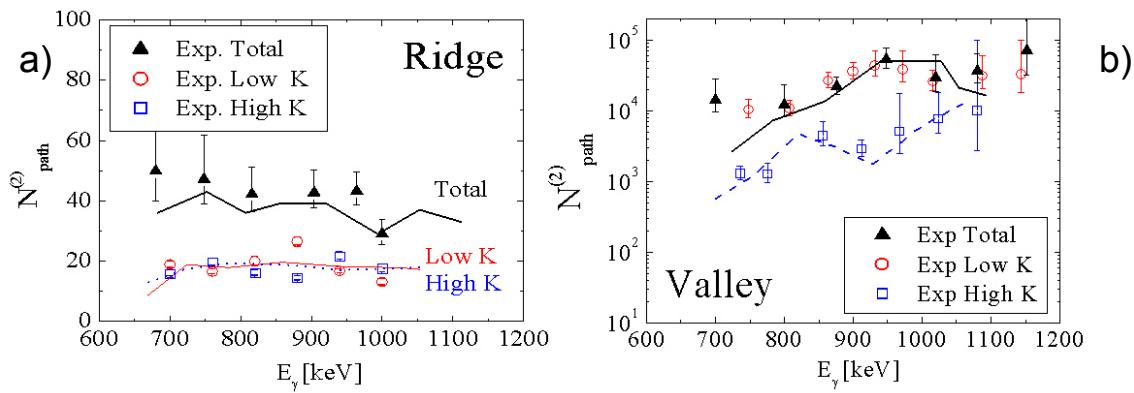
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The validity of the selection rules on the K-quantum number is used as a probe of the order-to-chaos transitions in warm rotating nuclei. In particular, the properties of the  $\gamma$ -decay flow feeding low-K and high-K structures are first investigated on an high-statistics EUROBALL data on  $^{163}\text{Er}$ , and then compared with simulations based on recent cranked shell model calculations for the specific nucleus [1]. While similar values ( $\approx 15$ ) are found for the number of discrete regular bands regardless of the value of K (as shown in panel a)), low-K bands are found to be fed by a much larger number of strongly interacting bands, as compared to high-K structures (panel b)), in agreement with the theoretical predictions (lines in the figures). This points to an at least partial conservation of the K-quantum number up to  $\approx 3$  MeV above yrast, as also suggested by the experimental study of the covariance between low-K and high-K states.



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